

ZOOLOGY.—Notes on the amphipod genus *Bactrurus* Hay, with description of a new species.¹ CLARENCE R. SHOEMAKER, U. S. National Museum.

In proposing the generic name *Bactrurus* in 1902, Dr. William P. Hay (Proc. U. S. Nat. Mus. 25: 430) said, "*C[rangonyx] mucronatus* Forbes is neither *Crangonyx* nor *Niphargus*, but belongs to a distinct genus for which I propose the name *Bactrurus*." His proposition appears not to have been accepted, as subsequent students allowed the species to remain in *Eucrangonyx* where it had been placed by T. R. R. Stebbing in 1899 (Trans. Linn. Soc. London (ser. 2) 7 (pt. 8): 423). In 1940 Leslie Hubricht and J. G. Mackin (Amer. Midland Nat. 23 (1): 201) revived the genus and gave a diagnosis, which Hay had failed to do.

I am here giving a fuller description of some of the generic characters, and I am also describing a new species from a well at Topeka, Kans.

Description of Bactrurus.—Animal long and slender, with the first 4 coxal plates about as deep as their respective segments. Head rather long with evenly rounding lateral lobes. Eyes absent. Antenna one-half to two-thirds the length of the body; primary flagellum very long, accessory flagellum 2-jointed and very short. Antenna 2 much shorter than 1. Mandible, molar strong, accessory cutting plate complex, about 7 spines in spine-row, palp with second and third joints subequal in length. Maxilla 1, inner plate with 5 or 6 plumose setae; outer plate with 7 spine-teeth. Maxilla 2, inner plate with oblique row of plumose setae. Maxilliped, inner plate with 4 or 5 apical spine-teeth; outer plate with from 5 to 7 spine-teeth on inner margin. Gnathopod 1 shorter and stouter than gnathopod 2, palms armed with many stout, notched spine-teeth. Peraeopods 3 to 5 with second joint moderately expanded. Abdomen elongate. Metasome segments with lower hind margins broadly rounding. Urosome segments free. Uropod 3, outer ramus about as long as its peduncle; inner ramus rudimentary. Telson entire or with slight emar-

gination. Stalked coxal gills occur on gnathopod 2 and peraeopods 1 to 5, but may be absent on peraeopod 5. Simple lateral sternal gills occur on mesosome segments 6 and 7 and may occur on metasome segment 1.

The two described species and the new species which I am here describing bear a close superficial resemblance, but they can be distinguished by certain characters, as follows:

Telson of male very long and cylindrical; telson of female extending beyond third uropods, slightly notched and armed with rather long spines.

mucronatus
Telson of male extending slightly beyond third uropods, apex slightly convex, entire, and armed with many short spines; telson of female extending beyond third uropods, slightly notched and armed with many short spines.

*brachycaudus*²
Telson of male and female not extending beyond third uropods, notched and armed with long spines. *hubrichti*

***Bactrurus mucronatus* (Forbes)**

Fig. 1

Crangonyx mucronatus S. A. Forbes, Illinois State Lab. Nat. Hist. Bull. No. 1: 6, figs. 1-7. 1876.

Crangonyx mucronatus O. P. Hay, Amer. Nat. 16: 241. 1882.

Eucrangonyx mucronatus T. R. R. Stebbing, Trans. Linn. Soc. London (ser. 2) 7 (pt. 8): 423. 1899.

Bactrurus mucronatus W. P. Hay, Proc. U. S. Nat. Mus. 25: 430. 1902.

Eucrangonyx mucronatus T. R. R. Stebbing, Das Tierreich, Amphipoda I: 388. 1906.

Eucrangonyx mucronatus A. L. Weckel, Proc. U. S. Nat. Mus. 32: 29, fig. 2. 1907.

Bactrurus mucronatus L. Hubricht and J. G. Mackin, Amer. Midl. Nat. 23 (1): 201. 1940.

Bactrurus mucronatus L. Hubricht, Amer. Midl. Nat. 29 (3): 693. 1943.

Forbes's description and figures of this species, which he first discovered in a well at Normal, Ill., are very good, but I am here giving a figure of the anterior part of the animal and detailed figures of the gnathopods of the male. I am also figuring the mouth parts, which were not figured by Forbes.

The gnathopods of *B. mucronatus* have the palms slightly concave, and gnathopod 1 is

¹ Published by permission of the Acting Secretary of the Smithsonian Institution. Received October 31, 1944.

² HUBRICHT and MACKIN, Amer. Midl. Nat. 23 (1): 201, fig. 8. 1940.

shorter and appears to be somewhat stouter than 2. The mandibular spine-row contains 7 spines; second and third joints of mandibular

is armed distally as follows: a sharp spine at the upper inner corner followed by a stout sharp spine-tooth, then a plumose or pectinate spine

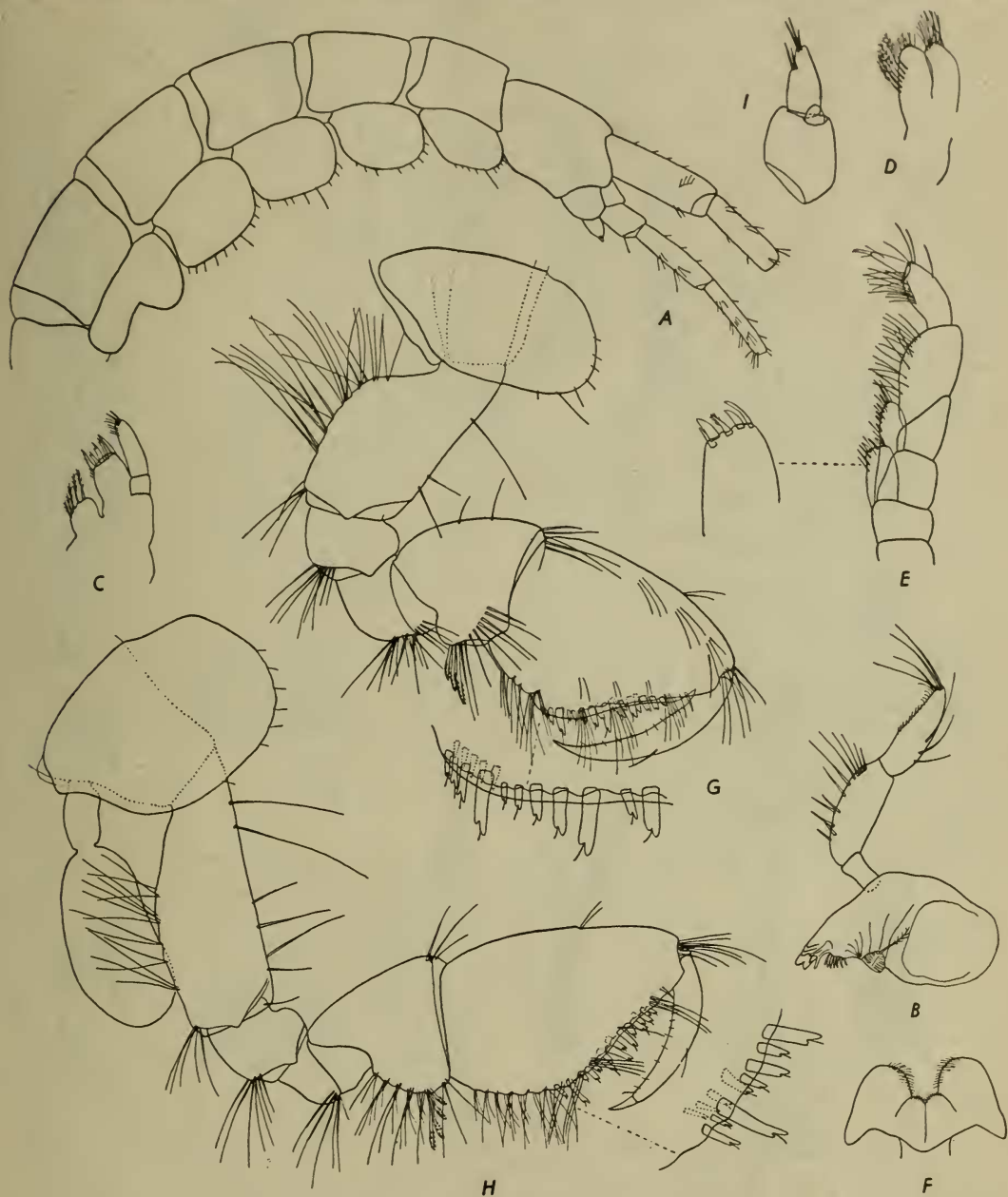


FIG. 1.—*Bactrurus mucronatus* (Forbes): Male: A, anterior half of animal; B, mandible; C, maxilla 1; D, maxilla 2; E, maxilliped; F, lower lip; G, gnathopod 1; H, gnathopod 2; I, uropod 3.

palp subequal. Inner plate of first maxilla with 5 plumose setae; outer plate with 7 spine-teeth. Second maxilla with oblique row of plumose setae on inner plate. Inner plate of maxilliped

followed by a stout sharp spine-tooth and a curved spine; outer plate armed with 5 or 6 spine-teeth on inner margin.

The outer ramus of uropod 3 is rather

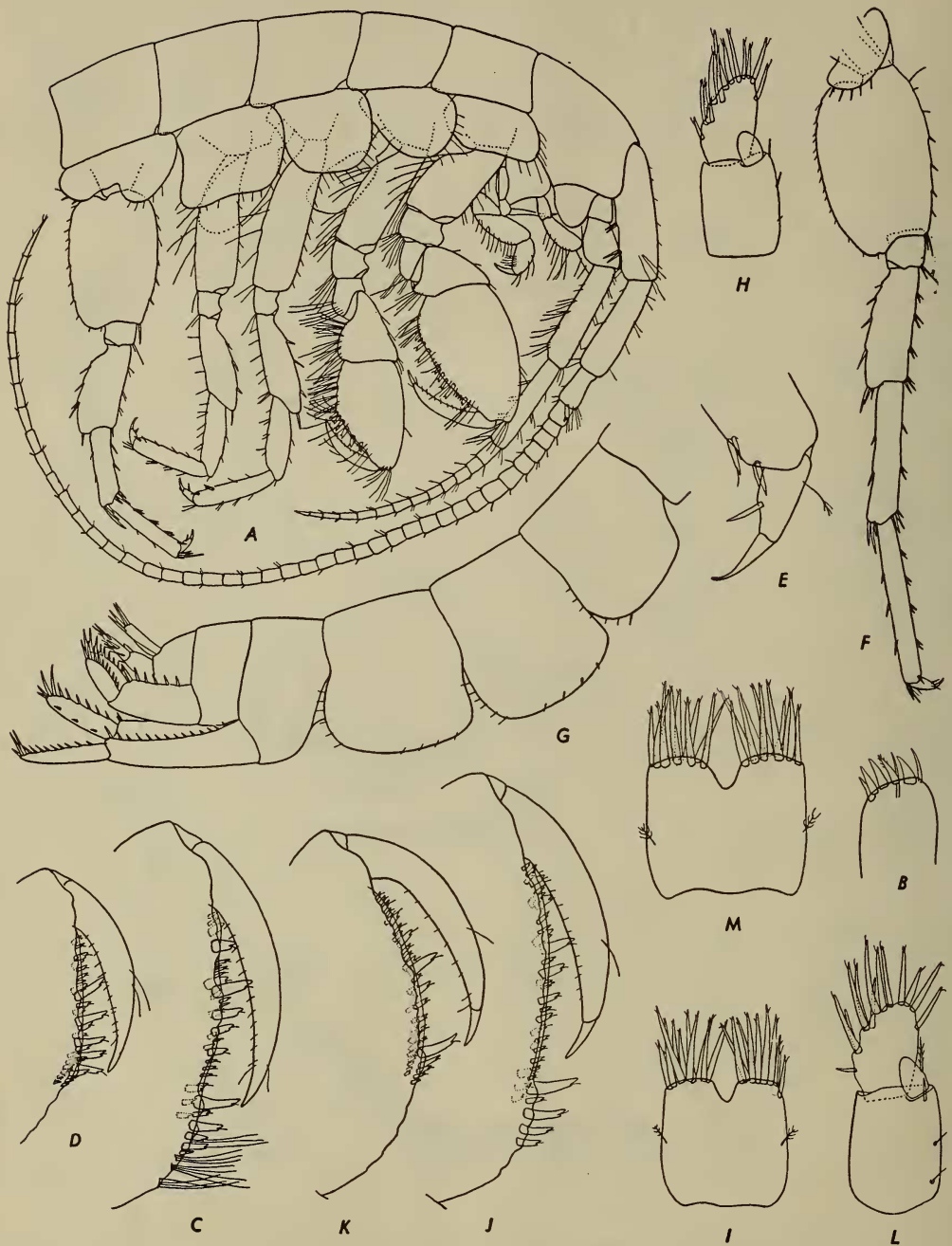


FIG. 2.—*Bactrurus hubrichti*, n. sp.: Male: A, anterior half of animal; B, apex of inner plate of maxilliped; C, D, palm of gnathopods 1 and 2; E, seventh joint of pereopod 1; F, pereopod 5; G, posterior half of animal; H, uropod 3; I, telson. Female; J, K, palms of gnathopods 1 and 2; L, uropod 3; M, telson.

slender, converges to the narrow truncate apex and is about as long as the peduncle; the inner ramus is very small and apparently unarmed. The telson of the male is very long and slender; that of the female is about twice as long as wide, slightly emarginate and armed distally with 2 groups of rather long spines. In the female the telson extends decidedly beyond the third uropods. Forbes says that the telson of the female is very similar to the telson of *Crangonyx gracilis*, but this is not correct, as the telson of *C. gracilis* in the female is somewhat wider than long and is cleft for about one-third its length. Coxal gills are present on the second gnathopods and the first 4 peraeopods but are not present on the fifth peraeopod in either sex. Lateral sternal gills are present on the sixth and seventh mesosome segments and may sometimes be present on the first metasome segment in either male or female. Forbes gives 9 to 10 mm as the length of the animal, but his specimens were apparently not fully grown, as some males in the national collection measure 16 mm from the front of the head to the end of the first uropods, and some of the females measure about 12 mm.

As no type has ever been designated for this species and as none of the original material appears to be extant, I am creating a neotype as follows: A male, U.S.N.M. 81546, taken from a well at Champaign, Ill., March 29, 1902.

***Bactrurus hubrichti*, n. sp.**

Fig. 2

Male.—Antenna 1, peduncular joints decreasing consecutively in length; primary flagellum of about 40 joints, all of which except the first eight and the terminal joint bear small, slender sense clubs; accessory flagellum of 2 joints, the terminal joint very small. Antenna 2, fourth joint a little longer than fifth; flagellum shorter than peduncle and composed of about 13 joints. No sense organs present. Mouth parts very much like those of *B. mucronatus*. Maxilliped, inner plate armed distally as follows: at upper inner angle a sharp spine followed by two larger sharp spine-teeth, then a pectinate spine followed by another large sharp spine-tooth and a curved spine (Fig. 2,

B); the outer plates in the male figured have 6 marginal spine-teeth on right plate and 5 on the left, but other males examined had as many as 7 teeth on a plate.

The first 5 coxal plates are as shown by Fig. 2, *A*. Gnathopod 1 perhaps a little shorter, but much stouter than 2. The palm of gnathopod 1 is slightly convex and that of gnathopod 2 is nearly straight. The armature of these palms is shown by Figs. 2, *C*, *D*. Peraeopods 1 and 2 subequal in length and alike in form; the seventh joint is strong and has a long sharp nail and a spine on inner margin. Peraeopods 3 to 5 increasing consecutively in length; the second joints bearing short spines on front and hind margins; seventh joints like those of peraeopod 1 and 2. Coxal gills are present on gnathopod 2 and all the peraeopods; lateral sternal gills are present on the sixth and seventh mesosome segments and the first metasome segment.

Metasome segments with lower hind margins broadly rounding and bearing short setae; and lower margin of segments 2 and 3 with a few short spines. Uropods 1 and 2 stout and very spinose, as shown by Fig. 2, *G*. Uropod 3 extends quite noticeably beyond the telson; outer ramus as long as peduncle and armed on outer margin with two groups of spines, each containing 3 spines, and a single spine proximally; inner ramus very small and without spines. Telson as long as wide; distal margin divided into two lobes by a shallow sinus, each lobe armed with about 10 long stout spines; lateral margins each with a central plumose seta. Length of male from front of head to end of uropod 1 about 21 mm.

Type.—A male, U.S.N.M. 80039, taken from a well at Topeka, Kans., by E. A. Popenoe, April 16, 1912.

Female.—The female closely resembles the male, the principal difference being in the second gnathopod. The palm of this gnathopod is convex, while that of the male is nearly straight. The arrangement of the spine-teeth of the gnathopods is shown by Figs. 2, *J*, *K*. The telson is a little wider than long, but otherwise like that of the male. Length of female from front of head to end of uropod 1 about 19 mm.